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Office30SEP02 E751978-1 D02973  
P01/7700 0.00-0222605.8

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Cardiff Road  
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## 1. Your reference

JCB/P101033GB

## 2. Patent application number

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0222605.8

23 SEP 2002

## 3. Full name, address and postcode of the or of each applicant (underline all surnames)

Mr Shahood Ahmed  
2 St Margarets Road  
Bradford  
BD7 3AB

Patents ADP number (if you know it)

847 475 1001

If the applicant is a corporate body, give the country/state of its incorporation

## 4. Title of the invention

COMMUNICATION DEVICE

## 5. Name of your agent (if you have one)

Harrison Goddard Foote

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

Belgrave Hall  
Belgrave Street  
Leeds  
LS2 8DD

Patents ADP number (if you know it)

14571001 7631310002

## 6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number  
(if you know it)Date of filing  
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## 7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
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## 8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer Yes if:

a) any applicant named in part 3 is not an inventor, or

b) there is an inventor who is not named as an applicant, or

c) any named applicant is a corporate body.

See note (d))

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Description 11

Claim(s) 5

Abstract

Drawing(s) 2

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Priority documents

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Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Date

HARRISON GODDARD FOOTE

30 September 2002

12. Name and daytime telephone number of person to contact in the United Kingdom

MR. J. C. BOAKES

0113 233 0100

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Patents Form 1/77

COMMUNICATION DEVICE

5 The present invention relates to apparatus and method for providing two-way communication between two users. In particular, but not exclusively, the invention relates to a way in which communication between two users can occur whereby one of the users is given the impression that the communication they are having is with an everyday object such as a teddy bear or child's doll.

10

It is well known that toys provide a great learning tool for teaching young children or those with learning disabilities. However, most toys such as teddy bears, dolls or action figures rely upon the user's imagination for many of the games played and thus the lessons which can be learnt. Education, discipline and development of children in early years is thus often limited by their own limitations.

20

Some toys are known which provide for some interaction between the child and the toy. For example radio controlled cars which use a master transmitter and a slave receiver allow a child to control the motion of a toy. Alternatively some toys provide a way in which a child can interact with a toy which will respond with a number of predetermined responses such as beeps or flashing lights. The responses from such interactive toys are limited as will be known by those skilled in the art.

30

Learning in a child or person with learning difficulties such as a disabled person may be restricted as a result of a problem with the relationship between the learner and the teacher. For example there are

occasions when children will not listen to their parents. As a result teaching of manners and discipline such as doing homework, tidying up, stopping children crying and encouraging them to eat food can be restricted.

5

Another problem is that on some occasions a parent or guardian may need to leave a child or learner unaccompanied in a room whilst the guardian attends to some other matter. Under such circumstances it is known that a child may be in danger as they may interact with household objects which may cause them harm. In addition if such a guardian is forced to leave a child alone any learning in which the child is involved must be terminated until the guardian returns.

15

It is an aim of embodiments of the present invention to mitigate at least partially the above-referenced problems.

-20

According to a first aspect of the present invention there is provided apparatus for providing two-way communication between a first user and a further user comprising:

a master communication device; and

25

a slave communication device, disguised as an everyday object, and including circuitry means for enabling said two-way communication via said master communication device; wherein

said slave communication device is disguised so that when said two-way communication is in progress, said first user will believe that said communication is between said first user and said everyday object.

According to a second aspect of the present invention there is provided a method for providing two-

35

way communication between a first user and a further user comprising the steps of:

5 providing a slave communication device, disguised as an everyday object, and a master communication device arranged for two-way communication therebetween;

providing said further user with access to only said master communication device and said first user with access to only said slave device; and

10 transmitting and receiving at least one communication signal over a wireless communication link between said master and slave devices; whereby

by virtue of the disguise of said slave communication device the two-way communication will appear, to said first user, to be between said first user  
15 and said everyday object.

According to a third aspect of the present invention there is provided a method for promoting learning in a learner user comprising the steps of:

20 providing a slave communication device disguised as an everyday object and a master communication device;

transmitting and receiving at least one communication signal over a wireless communication link between said master device and said slave device; whereby

25 a further user having access to only said master device can communicate, via said communication link, with said learner user having access to only said slave device thereby promoting learning in said learner user.

30 Embodiments of the present invention provide the advantage that a guardian or parent can speak from a master unit through a toy or other everyday object giving the child the impression that the toy is talking and that that child (or other person with learning difficulties)  
35 is having a one to one conversation with the everyday

object. This can be a very powerful tool for the education, discipline and development of children in their important years because if children will not listen to their parents they may listen to their favourite  
5 character such as their teddy bear.

Embodiments of the present invention provide the possibilities for children to be taught manners, discipline such as doing homework, tidying up, stopping  
10 children crying and encouraging them to eat food. This may be done whilst the child is alone in a room whilst their parent or guardian may be elsewhere carrying out another function and will only listen to their child or may observe them on a video unit.

15

Embodiments of the present invention enable parents to have an unlimited, natural and spontaneous dialogue with their child through their child's favourite toy. Since the parent or guardian or other teacher  
20 communicates through the toy via a two-way communication link the toy is inherently allowed to speak in any language. Embodiments of the present invention include, in a slave communication device located inside the everyday object, a voice alteration mechanism so that the  
25 parent or guardian's voice is disguised so that the child will not recognise it.

Embodiments of the present invention provide the advantage that the master and slave communication devices  
30 may be used as baby alarms or, when a child has outgrown the system it may be used as a useful way for users to communicate between rooms in a house.

Embodiments of the present invention will now be described in detail hereinafter with reference to the accompanying drawings in which:

Figure 1 illustrates use of an embodiment of the present invention;

Figure 2 illustrates a master communication device;

Figure 3 illustrates an everyday object in which is located a slave communication device;

Figure 4 illustrates a control panel on the master communication device;

Figure 5 illustrates components of the circuitry in the slave communication device;

Figure 6 illustrates a portion of the master communication device; and

Figure 7 illustrates a portion of the everyday object disguising the slave communication device.

In the drawings like reference numerals refer to like parts.

20

Figure 1 illustrates an imaginary location in a house and is meant to illustrate two rooms 10 and 11 separated by a wall 12. It will be understood that embodiments of the present invention are not limited to use in such an environment. A first user 13 such as a child or person suffering from a learning disability is placed in room 11 whilst a further user 14, such as a parent or guardian is located away from the child 13. An everyday object 15 such as a child's teddy bear or doll is located with the child. A video camera 16 is arranged to provide a view of the room where the child is located. The view is displayed on the monitor 17 which may be observed by the parent. It will be understood that embodiments of the present invention may be used without the video and monitor link in which situation the parent



may either discreetly observe a child through a window or by being located in the same room as the child in a hidden way. Alternatively a parent may not have a view of the child but will only communicate with the child through a master communication device 18.

The master communication device 18 may be seen in more detail in figure 2 and includes a microphone 20 into which a parent can speak. A speaker 21 which enables a voice of a child speaking to the everyday object 15 to be relayed to the parent. An on/off switch 22 and a user interface/control panel 23. The control panel 23 is described in more detail with reference to figure 4 below. The master communication device 18 also includes an antenna 24 and communication signal transmitting and receiving means to enable a voice of the parent to be transmitted via the microphone 20 and antenna 24 to a receiver and circuitry in the slave device located in the everyday object 15 which can translate the received communication signal into an audible voice via a speaker. It will be understood that the master communication device could be provided in any form or unit and may include a headset which a parent or guardian 14 could wear for prolonged use. Embodiments of the present invention may include an LED to indicate whether the master communication device is on or off.

Figure 3 illustrates a child's teddy bear as an example of a typical toy which maybe used to house a slave communication device. A teddy bear is selected as being a toy common to both sexes. Alternatively a toy soldier or child's doll may be used. It will be understood that the present invention is not limited to disguising the slave communication device as a toy. Rather a broad range of everyday objects maybe utilised

so that a child would be under the impression that they were having a conversation with that everyday object when a parent was speaking to them via the master communication device. The teddy bear 15 includes a body portion which disguises the circuitry required by the slave communication device to enable two-way communication with the master communication device. The disguise may be formed from a plastic or fur covering or other material and may include an internal framework to provide a predetermined shape to the everyday object. The body portion of the disguise covers substantially all of the slave communication device so that it will not be obvious to a learner user that such components exist. The teddy bear 15 includes movable eyes 30, a movable mouth piece 31 and a movable limb such as a paw 32. In order to move these movable portions mechanical drive units may be provided in the toy as will be known by those skilled in the art. The movable portions of the disguise can be synchronised to move in time with the voice of the parent or guardian as they talk. Alternatively movement may be specifically provided for by providing movement control buttons on the user interface 23 of the master communication device.

A charging connection 33, which is shown in more detail in figure 7, is provided so that power to the slave communication device may be recharged at a convenient moment. An LED 34 may be provided to indicate whether the slave communication device is on or off. This will be discreetly placed, such as for example within a fold of the teddy bears skin or may be omitted completely.

An on/off control 35 is also provided as a button disguised as a part of the body of the toy 15. A parent

or guardian may discreetly turn the slave communication device on or off by pressing this button without the child being aware of the subterfuge.

5        Figure 4 illustrates the user interface 23 of the master communication device 18 in more detail. The user interface includes a system on/off control 40 which controls whether the master communication device is on or off. A movement control selection switch 41 is also  
10 provided which can disable or enable movement of the various moving parts of the teddy bear. A volume control 42 is also provided which can control the volume of the speaker 21 of the master communication unit. Other  
15 synchronisation switches 43 and 44 may be provided to disable lip synchronisation or arm synchronisation respectively to the parents voice.

Figure 5 illustrates internal parts of the teddy bear comprising the slave communication device 50.

20        The communication unit 50 is housed within the body of the teddy bear which thus acts as a disguise so that a child would be unaware of the units presence. In this way a parents voice, or parents disguised voice, emitted  
25 from the speaker 51 of the slave communication device will appear to come from the teddy bear rather than from the parent. The slave communication device 50 includes an antenna 52 from which a communication signal can be transmitted to the antenna 24 of the master communication  
30 device or signals from that master communication device can be received at the slave communication device. An on/off switch 53 is controlled by a user pressing button 35 on the teddy bear. A volume control 54 permits the volume emitted by the speaker 51 to be controlled thus

selecting the volume which the child hears coming from the toy. A microphone 55 detects the voice of a child talking to the teddy bear which can then be transmitted to the master communication unit so that the parent can  
5 hear what the child is saying.

Figure 6 illustrates a charger connection point 60 on the master communication device which enables a battery in that device to be recharged. A headset  
10 connection point 61 may also be provided on the master communication device which enables a headset to be plugged in to facilitate easy use by a parent over a prolonged period. As noted above figure 7 illustrates a portion of the teddy bear 15, such as a paw, which  
15 includes a charging connection to enable a battery, not shown, in the slave communication device 50 to be recharged.

The master communication device 18 includes all the  
20 electronic circuitry and controls for operation by a parent. It includes a transmitter which may be used to communicate with the toy 15 to control movement of one or more movable parts of the toy. In addition the master communication device includes a two channel  
25 transmitter/receiver which is used for voice communication between itself and the slave communication device 50. In like manner the slave communication device 50 includes circuitry housed in the body of an everyday object such as a teddy bear and includes circuitry for a  
30 two channel voice transmitter/receiver which enables two-way conversation between a child talking into or at the teddy bear and a parent using the master communication device. The circuitry which may be housed in a housing of the slave communication unit 50 may include voice  
35 synchronisation circuitry.

Embodiments of the present invention provide a way in which a parent or guardian may talk to a child or a person with learning difficulties through an everyday object such as a toy. By virtue of disguising a slave communication device the child will believe that they are having a conversation with the toy. The parent may monitor the child during a conversation using a video camera and monitor arrangement or may simply listen to the child.

Embodiments of the present invention provide a means for reading a bedtime story to a child without the presence of the parent in the room. This may get the child used to falling asleep without a parent being present. It will be understood that in such a case the everyday object may be disguised as a book or any other night time related object.

It will also be understood that according to embodiments of the present invention a multitude of different body portions (or suits) may be provided to selectively disguise the slave communication unit. A parent or guardian would need only to discreetly remove the communication unit from one disguise and place it in another selected disguise.

It will be understood that embodiments of the present invention can provide an efficient learning aid. By virtue of a child being focussed on an everyday object seemingly talking and listening to the child the child's attention can be maintained and learning promoted.

It will be understood that embodiments of the present invention may be made of materials conforming to the Kite standards of safety for children's toys.

5        Whilst specific preferred embodiments of the present invention have been above described it will be understood by those skilled in the art that the present invention is not limited to the specifics described. Rather variations and modifications may be envisaged without  
10 departing from the scope of the present invention.

## CLAIMS:

1. Apparatus for providing two-way communication between a first user and a further user comprising:
- 5     a master communication device; and  
      a slave communication device, disguised as an everyday object, and including circuitry means for enabling said two-way communication via said master communication device; wherein
- 10     said slave communication device is disguised so that when said two-way communication is in progress, said first user will believe that said communication is between said first user and said everyday object.
- 15   2. The apparatus as claimed in claim 1 wherein:  
      each communication device includes speaker means for providing an audible voice signal;  
      microphone means for converting voice patterns of a user into a format for transmittal over a communication
- 20   link as a communication signal; and  
      communication signal transmitting and receiving means for respectively transmitting and receiving at least one communication signal.
- 25   3. Apparatus as claimed in claim 1 or claim 2 wherein the disguise of said slave communication device comprises an outer body portion surrounding substantially all of the circuitry of said slave communication device.
- 30   4. The apparatus as claimed in any one of claims 1 to 3 wherein said disguise includes at least one movable portion arranged to move independently with respect of said body portion of the disguise and includes means for moving said movable portion responsive to a movement

control signal received from said master communication device.

5     Apparatus as claimed in claim 4 wherein said master communication device includes control means for generating and transmitting a movement control signal to said slave communication device.

10     6. The apparatus as claimed in any one of claims 1 to 5 wherein said slave communication device includes a power switch accessible without the need to remove said body portion.

15     7. Apparatus as claimed in any one of claims 1 to 6 wherein said apparatus is disguised as a teddy bear.

8. Apparatus as claimed in any one of claims 1 to 6 wherein said apparatus is disguised as a child's doll.

20     9. Apparatus as claimed in any one of claims 1 to 8 wherein said first user comprises a child and said further user comprises a parent or teacher.

25     10. The apparatus as claimed in any one of claims 1 to 8 wherein said first user comprises a user with learning difficulties.

30     11. A method for providing two-way communication between a first user and a further user comprising the steps of:  
providing a slave communication device, disguised as an everyday object, and a master communication device arranged for two-way communication therebetween;  
providing said further user with access to only said master communication device and said first user with  
35 access to only said slave device; and



transmitting and receiving at least one communication signal over a wireless communication link between said master and slave devices; whereby

5 by virtue of the disguise of said slave communication device the two-way communication will appear, to said first user, to be between said first user and said everyday object.

10 12. The method as claimed in claim 11 further comprising disguising said slave communication device by the steps of surrounding substantially all of the circuitry of said slave communication device with a preformed body portion formed to look like said everyday object.

15 13. The method as claimed in claim 11 or claim 12 further comprising, prior to said step of providing said further user with access to only said master communication device, providing said further user with access to said slave communication device during a period  
20 of time in which said further user may switch on power to the slave communication device.

25 14. The method as claimed in claim 13 wherein said step of switching power on comprises pressing a button disguised on said slave communication device.

15. The method as claimed in any one of claims 11 to 14 wherein said steps of transmitting and receiving a communication signal comprises providing a two-channel  
30 radio service between said slave and master devices.

16. The method as claimed in any one of claims 11 to 15 further comprising:

35 transmitting, from said master communication device, a movement control signal;

receiving said movement control signal at said slave communication device; and

moving at least one movable portion of said disguise independently with respect to said body portion on said disguise of said slave communication device responsive to  
5 said movement control signal.

17. The method as claimed in claim 16 further comprising selecting a one from a plurality of movable portions of  
10 said disguise via said master communication device.

18. A method for promoting learning in a learner user comprising the steps of:

providing a slave communication device disguised as  
15 an everyday object and a master communication device;  
transmitting and receiving at least one communication signal over a wireless communication link between said master device and said slave device; whereby  
a further user having access to only said master  
20 device can communicate, via said communication link, with said learner user having access to only said slave device thereby promoting learning in said learner user.

19. The method as claimed in claim 18 wherein said  
25 learner user comprises a child and said further user comprises a parent or teacher.

20. The method as claimed in claim 18 wherein said learner user comprises a user with learning difficulties.

30

21. The method as claimed in any one of claims 18 to 20 wherein said everyday object comprises a toy.

22. Apparatus constructed and arranged substantially as hereinbefore described with reference to the accompanying drawings.

- 5 23. A method substantially as hereinbefore described with reference to the accompanying drawings.

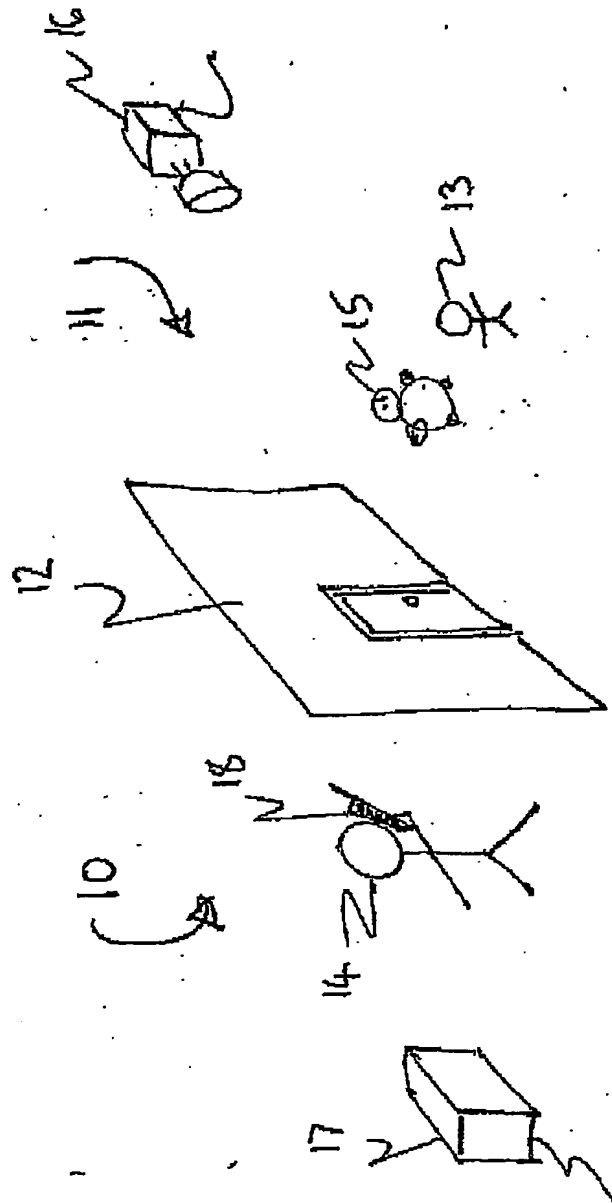


Fig 1.

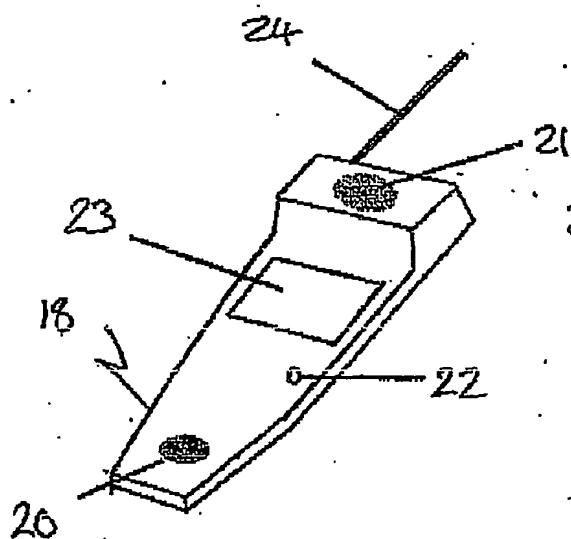


FIG 2.

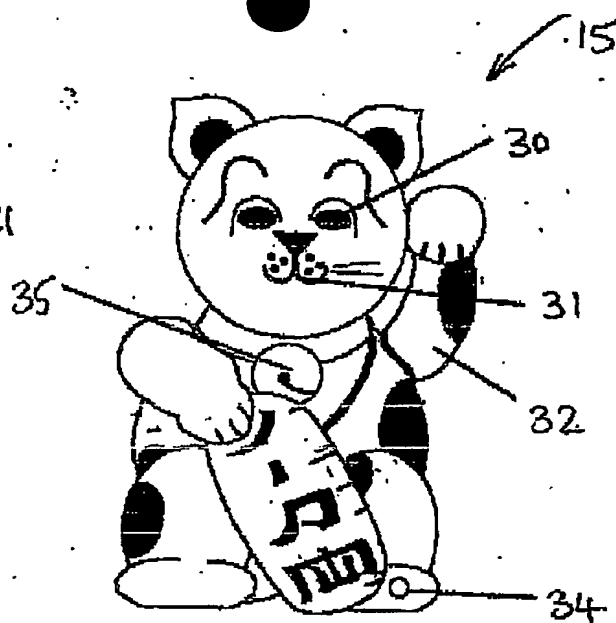


FIG 3.

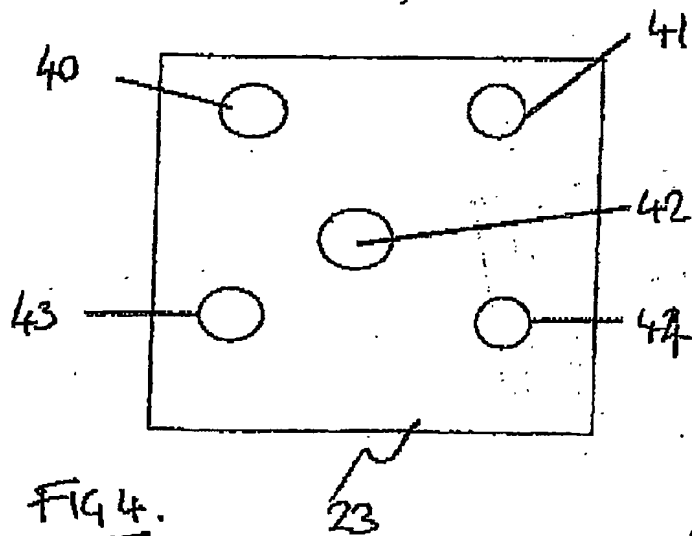


FIG 4.

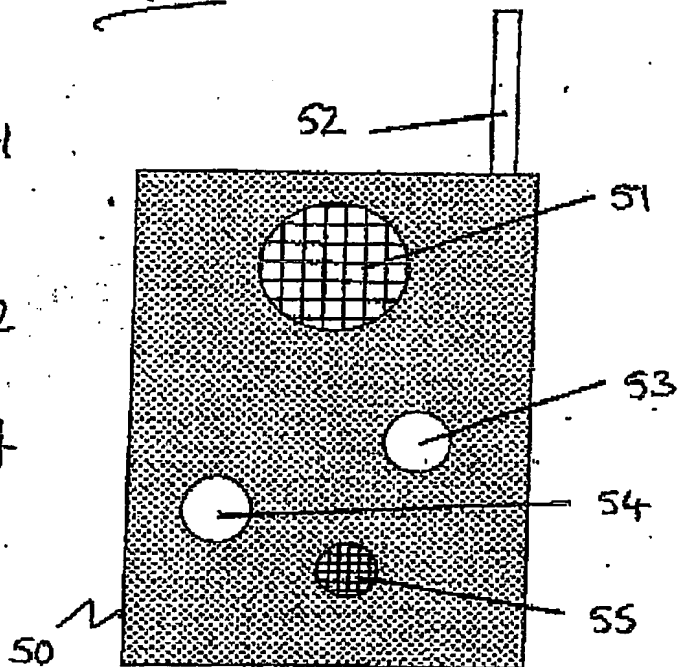


FIG 5.

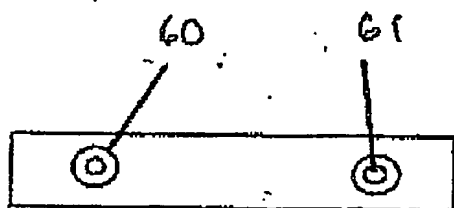


FIG 6.

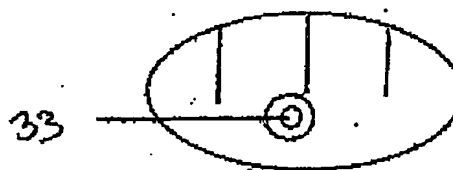
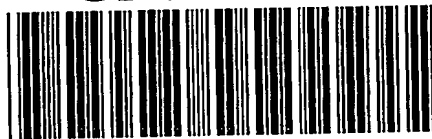


FIG 7.

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